

Lymphocytotoxins in Serum from Patients with Dengue Hemorrhagic Fever (DHF)

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OBJECTIVE : To identify lymphocytotoxic activity in the sera of Thai children with dengue hemorrhagic fever.

BACKGROUND : Serum lymphocytotoxins have been reported in a wide variety of disease states (1). It is not clear why such factors are elicited and very little is known concerning the action of naturally occurring lymphocytotoxins in the immune response to infectious agents. Earlier work in this Laboratory (2) indicated that the percentage of peripheral T-cells in patients during the acute stage of DHF is reduced when compared with the percentage of T-cells in peripheral blood during the convalescent stage. Lymphocytotoxic factors directed against specific cell populations may be one mechanism responsible for the decrease in the number of circulating lymphocytes and thereby have a regulatory influence on the immune response of individuals to dengue hemorrhagic fever. Therefore, we are presently screening sera from patients with DHF to determine the incidence of lymphocytotoxins, their temperature of optimal activity, and biological effect on autologous and allogenic lymphocytes.

METHODS : Cytotoxic assays are performed with acute sera from patients with dengue hemorrhagic fever following the previously described (1) modification of Terasaki's methodology (2).

RESULTS : Table 1 summarized the results, to date, of lymphocytotoxin assays performed with sera from patients with DHF and lymphocytes from uninfected controls. Killing due to control sera averaged only 4.5% (37°C) and 6.1% (15°C).

Additional studies are being performed in this area in order to determine the in vivo relevance of antilymphocytotoxins in patients with dengue hemorrhagic fever.

REFERENCES

1. Wells, R.A. et al.: Peripheral Blood Leukocyte and Lymphocyte Subpopulation Alterations in Thai Children with Dengue Hemorrhagic Fever. Submitted for Publication.

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2. Terasaki, P.I., Mottiron, V.D. and Barnett, E.V.: Cytotoxins in Disease: Autocytotoxins in Lupus. N. Engl. J. Med. 283:724-728, 1970.

Table 1. Lymphocytotoxins in Acute Dengue Hemorrhagic Fever.

% Cytotoxicity of Normal Adult Allogenic Lymphocytes		
Sample	Temperature	
	<u>37° C</u>	<u>15° C</u>
1	8.5*	23.5
2	4.5	4.5
3	4.0	6.0
4	7.0	9.0
5	7.0	42.0
6	7.0	24.0
7	6.5	27.5
8	7.0	8.0
9	5.5	12.5
10	8.5	10.0
11	8.0	51.0
12	7.5	35.5

* Percent : Cytotoxicity by dye exclusion.